

WHAT IS CLAIMED IS:

1. A composition comprising an immunogenic peptide having an HLA-A2.1 binding motif, which immunogenic peptide is selected from a group consisting of:

AILTFGSFV,
HLRDFALAV,
ALLGSIALL,
ALLATILAA,
LLATILAAV,
RLFADLAA,
YLSKCTLAV,
LVYHIYSKI,
SMYLCILSA,
YLCILSALV,
VMFSYLQSL,
RLHVVAYSA,
GLQTLGAFV,
FVEEQMTWA,
QMTWAQTVV,
IILDIAIFV,
AIEVCNAFV,
AMGNRLVEA,
RLVEACNLL
TLSIVTFSL,
KLSVLLLEV,
LLEVNRSV,
FVSSPTLPV,
AMLVLLAEI,
QMARLAWEA,
VLAIEGIFMA,
YLYHPLLSPI,
SLFEAMLANV,

0010702 11000

32 STTGINQLGL,
33 LAILTFGSFV,
34 ALLGSIALLA,
35 ALLATILAAV,
36 LLATILAAVA,
37 RLFADELAAL,
38 YLSKCTLAVL,
39 LLVYHIYSKI,
40 SMYLCILSAL,
41 HLHRQMLSFV,
42 LLCGKTGAFL,
43 ETLSIVTFSL,
44 VMCTYSPPL,
45 KLFCQLAKT,
46 ATPPAGSRV,
47 FLQSGTAKSV,
48 CMDRGLTVFV,
49 VLLNWWRWRL,
50 GVFTGLTHI,
51 QMWKCLIRL,
52 IMTCMSADL,
53 ALAAXCLST,
54 VLSGKPAII,
55 FISGQYLA,
56 YIMTCMSADL,
57 AIASLMAFTA,
58 GLAGAAIGSV,
59 MIGVLGV,
60 VLPLAYISL,
61 SLGCIFFPL,
62 PLAYISLFL,
63 LMLFYQVWA,
64 NISIYNYFV,

00100700 111000

65 NISVYNYFV,
66 FVWTHYYSV,
67 FLTWHRYHL,
68 LTWHRYHLL,
69 MLQEPSFSL,
70 SLPYWNFAT,
71 RLPEPQDVA,
72 VTQCLEVRV,
73 LLHTFTDAV,
74 NMVPFWPPV,
75 AVVGALLLV,
76 AVVAALLLV,
77 LLVAAIFGV,
78 SMDEANQPL,
79 VLPLAYISV,
80 SLGCIFFPV,
81 PLAYISLFV,
82 LLLFQQARV,
83 LMLFYQVWV,
84 LLPSSGPGV,
85 NLSIYNYFV,
86 NLSVYNYFV,
87 FLWTHYYSV,
88 SLKKTFLGV,
89 FLTWHRYHV,
90 MLQEPSFSV,
91 SLPYWNFAV,
92 ALGKNVCDV,
93 SLLISPNSV,
94 SLFSQWRVV,
95 TLGTLCSNV,
96 RLPEPQDVV,
97 VLQCLEVRV,

98 SLNSFRNTV,
99 SLDSFRNTV
100 FLNGTGGQV
101 VLLHTFTDV
102 ALVGALLLV
103 ALVAALLLV,
104 LLVALIFGV,
105 YLIRARRSV,
106 SMDEANQPV,
107 SLGCIFFPLL,
108 GMCCPDLSPV,
109 AACNQKILTV
110 FLTWHRYHLL,
111 SLHNLAHLFL
112 LLLVAAIFGV
113 LLVAAIFGVA,
114 ALIFGTASYL,
115 SMDEANQPLL,
116 LLTDQYQCYA,
117 SLGCIFFPLV,
118 FLMLFYQVWV,
119 ALCDQRVLV,
120 ALCNQKILTV,
121 FLTWHRYHLV,
122 SLHNLAHLFV,
123 NLAHLFLNGV,
124 NMVPPFWPPVV,
125 ILVVAALLLV,
126 LLVALIFGTV,
127 ALIFGTASYV,
128 SMDEANQPLV,
129 LLTDQYQCYV,
130 LLIQNIIQNDT,

131 IIQNDTGfYTL,
132 TLFNVTRNDTA
133 LTLLSVTRNDV
134 GLYTCQANNSA,
135 ATVGIMIGVLV,
136 GLVPPQHLIRV,
137 GLAPPVHLIRV,
138 GLAPPEHLIRV,
139 ILIGVLVGV,
140 YLIMVKCWMV,
141 LLGRDSFEV,
142 FMYSDFHFI,
143 NMLSTVLGV
144 SLENFRAYV,
145 KMAELVHFV,
146 KLAELVHFV
147 VLIQRNPQV,
148 VLLGVVFGV,
149 SLISAVVGv,
150 YMIMVKBWMI,
151 YLIMVKBWMV,
152 KLWEELSVV,
153 AMBRWGLLV,
154 IIIGVLVGV,
155 ATVGIIIGV,
156 SJPPPGTRV,
157 LVFGIELJEV,
158 ILGFVFTL,
159 KIFGSLAFL,
160 YLQLVFGIEV,
161 MMNDQLMFL,
162 ALVLAGGFFL,
163 WLCAGALVL,

164 MVFELANSI,
 165 RMMNDQLMFL,
 166 LVLAGGFFL,
 167 VLAGGFFLL,
 168 LLHETDSAV,
 169 LMYSLVHNL,
 170 QLMFLERAFL,
 171 LMFLERAFL,
 172 KLGSGNDFEV,
 173 LLQERGVAYI,
 174 GMPEGDLVYV,
 175 FLDELKAENI,
 176 ALFDIESKV,
 177 and GLPSIPVHPI.
 178
 179

1 2. A method of inducing a cytotoxic T cell response against a
 2 preselected antigen in a patient expressing an HLA-A2.1 MHC product, the method
 3 comprising contacting cytotoxic T cells from the patient with a composition comprising
 4 an immunogenic peptide selected from the group consisting of:

5 AILTFGSFV,
 6 HLRDFALAV,
 7 ALLGSIALL,
 8 ALLATILAA,
 9 LLATILAAV,
 10 RLFADELAA,
 11 YLSKCTLAV,
 12 LVYHIYSKI,
 13 SMYLCILSA,
 14 YLCILSALV,
 15 VMFSYLQSL,
 16 RLHVYAYSA,

03459702-11000

17 GLQTLGAFV,
18 FVEEQMTWA,
19 QMTWAQTVV,
20 IILDTAIFV,
21 AIFVCNAFV,
22 AMGNRLVEA,
23 RLVEACNLL
24 TLSIVTFSL,
25 KLSVILLEV,
26 LLEVNRSV,
27 FVSSPTLPV,
28 AMLVLLAEI,
29 QMARLAWEA,
30 VLAIEGIFMA,
31 YLYHPLLSPI,
32 SLFEAMLANV,
33 STTGINOLGL,
34 LAILTFGSFV,
35 ALLGSIALLA,
36 ALLATILAAV,
37 LLATILAAVA,
38 RLFADLAAL,
39 YLSKCTLAVL,
40 LLVYHIYSKI,
41 SMYLCILSAL,
42 HLHRQMLSFV,
43 LLCGKTGAFL,
44 ETLSIVTFSL,
45 VMCTYSPPL,
46 KLFCQLAKT,
47 ATPPAGSRV,
48 FLQSGTAKSV,
49 CMDRGLTVFV,

50 VLLNWWRWRL,
51 GVFTGLTHI,
52 QMWKCLIRL,
53 IMTCMSADL,
54 ALAAYCLST,
55 VLSGKPAII,
56 FISGIQYLA,
57 YIMTCMSADL,
58 AIASLMAFTA,
59 GLAGAAIGSV,
60 MIGVLGV,
61 VLPLAYISL,
62 SLGCIFFPL,
63 PLAYISLFL,
64 LMLFYQVWA,
65 NISIYNYFV,
66 NISVYNYFV,
67 FVWTHYYSV,
68 FLTWHRYHL,
69 LTWHRYHLL,
70 MLQEPSFSL,
71 SLPYWNFAT,
72 RLPEPQDVA,
73 VTQCLEVRV,
74 LLHTFTDAV,
75 NMVPFWPPV,
76 AVVGALLLV,
77 AVVAALLLV,
78 LLVAAIFGV,
79 SMDEANQPL,
80 VLPLAYISV,
81 SLGCIFFPV,
82 PLAYISLFV,

83 LLLFQQARV,
84 LMLFYQVWV,
85 LLPSSGPGV,
86 NLSIYNYFV,
87 NLSVYNYFV,
88 FLWTHYYSV,
89 SLKKTFLGV,
90 FLTWHRYHV,
91 MLQEPSFSV,
92 SLPYWNFAV,
93 ALGKNVCDV,
94 SLLISPNSV,
95 SLFSQWRVV,
96 TLGTL CNSV,
97 RLPEPQDVV,
98 VLQCLEVRV,
99 SLNSFRNTV,
100 SLDSFRNTV
101 FLNGTGGQV
102 VLLHTFTDV
103 ALVGALLV
104 ALVAALLV,
105 LLVALIFGV,
106 YLIRARRSV,
107 SMDEANQPV,
108 SLGCIFFPLL,
109 GMCCPDLSPV,
110 AACNQKILTV
111 FLTWHRYHLL,
112 SLHNL AHLFL
113 LLLVAAIFGV
114 LLVAAIFGVA,
115 ALIFGTASYL,

116 SMDEANQPLL,
117 LLTDQYQCYA,
118 SLGCIFFPLV,
119 FLMLFYQVWV,
120 ALCDQRVLIV,
121 ALCNQKILTV,
122 FLTWHRYHLV,
123 SLHNLHLFV,
124 NLAHLFLNGV,
125 NMVPFWPPVV,
126 ILVVAALLLV,
127 LLVALIFGTV,
128 ALIFGTASYV,
129 SMDEANQPLV,
130 LLTDQYQCYV,
131 LLIQNIQNDT,
132 IIQNDTGfYTL,
133 TLFNVTRNDTA
134 LTLLSVTRNDV
135 GLYTCQANNSA,
136 ATVGIMIGVLV,
137 GLVPPQHLIRV,
138 GLAPPVHLIRV,
139 GLAPPEHLIRV,
140 ILIGVLVGV,
141 YLIMVKCWMV,
142 LLGRDSFEV,
143 FMYSDFHFI,
144 NMLSTVLGV
145 SLENFRAYV,
146 KMAELVHFV,
147 KLAELVHFV
148 VLIQRNPQV,

00100702 141000

149 VLLGVVFGV,
150 SLISAVVGV,
151 YMIMVKBWMI,
152 YLIMVKBWMV,
153 KLWEELSVV,
154 AMBRWGLLV,
155 IJIGVLVGv,
156 ATVGLJIGV,
157 SJPPPGTRV,
158 LVFGIELJEV,
159 ILGFVFTL,
160 KIFGSLAFL,
161 YLQLVFGIEV,
162 MMNDQLMFL,
163 ALVLAGGFFL,
164 WLCAGALYL,
165 MVFELANSI,
166 RMMNDQLMFL,
167 LVLAGGFFL,
168 VLAGGFFLL,
169 LLHETDSAV,
170 LMYSLVHNL,
171 QLMFLERAFL,
172 LMFLERAFL,
173 KLGSGNDFEV,
174 LLQERGVAYI,
175 GMPEGDLVYV,
176 FLDELKAENI,
177 ALFDIESKV,
178 and GLPSIPVHPI.

179

| | |
|----|-------------|
| 3 | RVYPELPK, |
| 4 | TVSAELPK, |
| 5 | TVYAEPPK, |
| 6 | TINYTLWR, |
| 7 | LVHFLLLK, |
| 8 | SVFAHPRK, |
| 9 | KVLHHMVK, |
| 10 | RVCACPGR, |
| 11 | KMFQCQLAK, |
| 12 | RAHSSHLK, |
| 13 | FVSNLATGR, |
| 14 | RLQLSNGNK, |
| 15 | RINGIPQQK, |
| 16 | KIRKYTMRK, |
| 17 | LVHFLLLLKK, |
| 18 | SMLEVFEGK, |
| 19 | SSFSTINK, |
| 20 | TSYVKVLHK, |
| 21 | VIFSKASEK, |

22 GSVVGNWQK,
23 SSLPTTMNK,
24 SVLEVFEGK,
25 SSBMGGMNK,
26 SSCMGGMNK,
27 RTLTLEFNVTK,
28 TISPLNTSYK,
29 STTINYTLWK,
30 ASSLPTTMNK,
31 KTYQGSYGFK,
32 VVRRBPHHEK,
33 GLAPPQHLIK,
34 NSSCMGGMNK,
35 SSBMGGMNRK,
36 RVCACPGRDK,
37 KTITVSAELPK,
38 TTITVYAEPPK,
39 PTISPSYTYR,
40 GLLGDNQVMPK,
41 MVELVHFLLLK,
42 FSTTINYTLWR,

43 GLLGDNQIMPK,
44 RLGFLHSGTAK,
45 ALNKMFCQLAK,
46 RVCACPGRDRR,
47 LSQETFSDLWK,
48 RAHSSHLKSKK,
49 VTCTYSPALNK,
50 GTRVRAMAIYK,
51 STSRHKKLMFK,
52 LAARNVLVK,
53 MALESILRR,
54 ISWLGRLSLR,
55 GSGAFGTVYK,
56 and ASPLDSTFYR.

1 4. A method of inducing a cytotoxic T cell response against a
2 preselected antigen in a patient, the method comprising contacting cytotoxic T cells from
3 the patient with a composition comprising an immunogenic peptide selected from the
4 group consisting of:

5 RVYPELPK,
6 TVSAELPK,
7 TVYAEPPK,
8 TINYTLWR,

9 LVHFLLLK,
10 SVFAHPRK,
11 KVLHHMVK,
12 RVCACPGR,
13 KMFCQLAK,
14 RAHSSHLK,
15 FVSNLATGR,
16 RLQLSNGNK,
17 RINGIPQQK,
18 KIRKYTMRK,
19 LVHFLLLKK,
20 SMLEVFEKG,
21 SSFSTTINK,
22 TSYVKVLHK,
23 VIFSKASEK,
24 GSVVGNWQK,
25 SSLPTTMNK,
26 SVLEVFEKG,
27 SSBMGGMNK,
28 SSCMGGMNK,
29 RTLTLFNVTK,

30 TISPLNTSYK,
31 STTINYTLWK,
32 ASSLPPTMKNK,
33 KTYQGSYGFK,
34 VVRRBPHEK,
35 GLAPPQHLIK,
36 NSSCMGGMNK,
37 SSBMGGMNRK,
38 RVCACPRDK,
39 KTITVSAELPK,
40 TTITVYAEPK,
41 PTISPSYTYR,
42 GLLGDNQVMPK,
43 MVELVHFLLLK,
44 FSTTINYTLWR,
45 GLLGDNQIMPK,
46 RLGFLHSGTAK,
47 ALNKMFCQLAK,
48 RVCACPRDRR,
49 LSQETFSDLWK,
50 RAHSSHLKSKK,

51 VTCTYSPALNK,
52 GTRVRAMAIYK,
53 STSRHKKLMFK,
54 LAARNVLVK,
55 MALESILRR,
56 ISWLGLRSLR,
57 GSGAFGTVYK,
58 and ASPLDSTFYR.

59

1 5. A composition comprising an immunogenic peptide selected from
2 a group consisting of the peptides listed in Table 13.

1 6. A method of inducing a cytotoxic T cell response against a
2 preselected antigen in a patient, the method comprising contacting cytotoxic T cells from
3 the patient with a composition comprising an immunogenic peptide selected from the
4 group consisting of the peptides listed in Table 13.

5

add
B' →